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TROUTMAN SANDERS LLP

ATTORNEYS AT LAW
A LIMITED LIABILITY PARTNERSHIP

401 9TH STREET, N.W. - SUITE 1000
WASHINGTON, D.C. 20004-2134
www.troutmansanders.com
TELEPHONE: 202-274-2950

James A. Stenger
james.stenger@troutmansanders.com

Direct Dial: 202-274-2801
Fax: 202-654-5652

February 12, 2002

RECEIVED
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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
445 12th Street, N.W., Room TW-A325
Washington, D.C. 20554

Re: Comments of the Power Line Communications Association
In the Matter of Review of Part 15
ET Docket 01-278, RM-9375; RM-10051

Dear Mr. Caton:

Transmitted herewith for filing on behalf of Power Line Communications Association are the original and ten copies of its Comments.

Also enclosed is an additional copy of the filing, which we respectfully request be receipt-stamped and returned to the undersigned.

Should additional information be necessary in connection with this matter, kindly communicate directly with the undersigned.

Respectfully submitted,

James A. Stenger

JAS/mcc
Enclosures

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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of Part 15 and other Parts of the	)	ET Docket 01-278
Commission's Rules	)	RM-9375
	)	RM-10051
	)	

To: The Commission

COMMENTS OF THE POWER LINE COMMUNICATIONS ASSOCIATION

Keith Brightfield
Chairman
Power Line Communications Association
c/o 401 9th Street, N.W.
Suite 1000
Washington, D.C. 20004-2134
(314) 554-3464
www.plca.net

Richard P. Keck
James A. Stenger
TROUTMAN SANDERS LLP
401 9th Street, N.W.
Suite 1000
Washington, D.C. 20004-2134
(202) 274-2950

Its Counsel

February 12, 2002

SUMMARY

The Power Line Communications Association (the "PLCA") is a newly formed association of electric utilities who are considering offering power line communications services. Power line communications ("PLC") could provide broadband Internet access over existing electric distribution lines and home wiring. PLC also could add intelligent networking capabilities to the electric power distribution grid. This Biennial Review of the Part 15 Rules is an appropriate occasion for the Commission to ensure that those Rules would accommodate the rapid and efficient deployment of PLC.

The Commission has indicated that its agenda for the coming year includes taking steps to promote deployment of broadband Internet access. The Commission also has said that it seeks to promote facilities based competition in communications services. In addition, the Commission wishes to improve homeland security by promoting facilities and platform differentiation. PLC could help to meet all of these goals. By adding communications capabilities to the electric distribution system, PLC would create a third facilities based competitor besides telephone and cable television. Importantly, PLC would provide a new competitor in the critical "last mile" space. PLC would not use telephone company customer "loops"; on the contrary, it could offer an alternative last mile connection to the Internet. PLC systems would be significantly differentiated from existing communications networks.

Indications are that PLC could be deployed under existing rules, but limited revisions may expand flexibility in designing networks, increase through put, and extend service reach in rural areas. The Rules in Part 15 should be reviewed to ensure that the limitations on carrier current systems promote PLC deployment while still protecting other licensees from harmful interference.

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To: The Commission

COMMENTS OF THE POWER LINE COMMUNICATIONS ASSOCIATION

The Power Line Communications Association (the "PLCA") hereby submits its comments in response to the Commission's Notice of Proposed Rulemaking and Order herein released on October 15, 2001 ("the NPRM"), and in support hereof respectfully shows as follows:

I. The Interest of the PLCA In This Proceeding.

The PLCA respectfully requests that the Commission review the limits for carrier current systems contained in Part 15 in order to promote the deployment of power line communications ("PLC") as a new, facilities-based broadband Internet service provider and as a means of improving the operation and security of the electric distribution system.[1]

A. The PLCA.

The PLCA is a trade association representing the interests of electric utilities interested in offering power line communications ("PLC"). Associate membership in the PLCA is open to

[1] The Association uses the term power line communications or PLC to describe the relevant service. However, as explained below this service is governed by the rules for carrier current systems, not power line carrier systems, despite the similar acronym sometimes used for the latter.

other parties who have an interest in PLC, such as equipment manufacturers. The PLCA was formed on the 5th of December, 2001, and held its first industry Conference on December 11-12, 2001. The founding membership of the PLCA includes electric utilities that collectively serve over 9 million U.S. households and over 27 million households worldwide.

B. The NPRM.

The NPRM proposes to review and update various rule sections in Parts 2, 15 and 18 of the Commission's Rules. These rules generally govern unlicensed communications devices, frequently referred to as "Part 15 devices." The Rules are reviewed biennially in order to make changes that will promote the deployment of new Part 15 devices and services, provided that existing licensed services can be protected from harmful interference:

> The Part 15 rules have been highly successful in permitting the development of new types of unlicensed devices while protecting authorized users of the radio spectrum from harmful interference. Millions of Part 15 devices operate at the current limits without any significant interference issues. To ensure the continuing success of the Part 15 rules, we believe that a review is warranted to ensure continued growth in the area of unlicensed devices while protecting against harmful interference to authorized services.[2]

The NPRM was issued in response to the *Biennial Regulatory Review 2000 Updated Staff Report* and petitions from various parties.[3] Since the PLCA was not formed until December, 2001, the PLCA was not in a position to file a petition or comments on the Staff Report prior to the issuance of the NPRM. However, the interests of the PLCA should be taken into account in this

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[2] *NPRM*, ¶ 2.

[3] *NPRM*, ¶ 1. The Commission's previous Part 15 Biennial Review remains pending. *In the Matter of 1998 Biennial Regulatory Review--Conducted Emissions Limits Below 30 MHz for Equipment Regulated under Parts 15 and 18 of the Commission's Rules*, ET Dkt No. 98-80, FCC 99-296, 64 FR 62159 (Oct. 18, 1999). Although the 1998 Biennial Review mentioned carrier current systems, it dealt with conducted limits, whereas radiated emissions limits are the relevant concern for PLC systems, and in any case, that NPRM concluded that, "we find the existing rules for carrier current systems are appropriate and are not proposing changes at this time. We will consider changes to these standards at some later date if additional information justifying a change to the regulations is forthcoming." *Id.* at ¶ 30. Technological developments since 1999 make this an appropriate time to revisit the carrier current system rules as part of the 2000 Biennial Review.

biennial review in order to speed the deployment of broadband Internet access to more Americans and to promote the security and reliability of the U.S. electric distribution system.

II. PLC Would Be A New Facilities Based Broadband Provider.

The Commission has expressed a strong interest in promoting the deployment of new, facilities-based broadband Internet services to more Americans. Broadband deployment is one of the five principal objectives that will guide the Commission's agenda over the coming year. In the realm of competition policy, "facilities based competition is the ultimate objective."[4] Homeland security is enhanced by creating new facilities that provide redundancy in case of disruption of one or more existing lines of communication. PLC could meet all of these goals and in addition increase the reliability and efficiency of the electric distribution system.

A. PLC Would Provide A Broadband Internet Access Service.

PLC would provide a broadband Internet service that would be delivered using existing electric utility and customer wiring. PLC could provide broadband Internet access to individual homes at speeds comparable to cable modem service and to DSL. Because the service would be synchronous (i.e., equal speeds to and from the home), it would offer a powerful platform for telecommuting, as well as engineering a redundant network architecture.

This broadband Internet platform could be used to provide those same services that other broadband Internet service providers ("ISP's") may offer, such as high speed Internet access capable of interacting with sites offering video streaming, voice over the Internet telephony ("VOIP") with multiple calling features and video teleconferencing, as well as lower bandwidth applications such as email and instant messaging. Early results of market research indicate significant interest in having electric utilities provide broadband Internet service.

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[4] "Digital Broadband Migration", remarks of Chairman Powell as prepared for delivery, released Oct. 24, 20001, at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-217103A1.pdf.

The service also would allow existing electric wiring in the home to serve as a high speed local area network ("LAN"). Customers could network multiple PC's and other devices simply by plugging PLC modems into any electric outlet. Because electric outlets tend to be the most ubiquitous type of outlet in the home, new or additional wiring generally would not be needed, which is not always the case with telephone and cable wiring.

B. PLC Would Deploy A New Communications Service Over Existing Wires.

PLC would create a new communications path over existing electric wires. Thus, it could bring a new facilities based competitor, but without the need to construct new wires, an expensive and time consuming process. PLC may operate over medium voltage (substation to transformer) and low voltage (transformer to home) electric power lines. PLC thus could provide the critical "last mile" connection that has delayed or impeded the delivery of broadband to many homes and businesses.

Within the home or business, a subscriber could plug a PLC modem power cord into any electric outlet. The power cord could provide both electric power and the communications signal. The PLC modem would be connected either to the USB or the Ethernet port on the computer using standard USB or Ethernet cables. A photo of a PLC modem showing the dual purpose plug and the USB and Ethernet ports is attached hereto as **Exhibit A**. Information could be transmitted to and from the computer over the existing electric wiring in the home, including networking with other computers or devices plugged into other outlets in the home.

The PLC modem may be readily available at any electronic retailer or from the service provider. Volume production would reduce the cost of the modem. PLC modem cost already has dropped significantly as a result of the roll-out of PLC service in Europe. Service providers may underwrite the modem cost. Initially, the PLC modem likely would be a plug and play

device that could be installed by the customer without a "truck roll" from the service provider. Eventually, the modem and its associated software may be pre-installed on PC's in the same manner as telephone dial-up modems.

From the home, the signal would travel over the low voltage electric lines connecting the home to the nearest transformer which typically serves 4-8 homes in suburban areas but may serve larger numbers of homes in urban areas and in multi-unit buildings ("MDUs"). The signal may bypass the transformer using a power line bridge device ("bridge" or "coupler") that the electric utility must install. The signal would travel over the medium voltage line to a point where a "backhaul" connection to a standard telecommunications network, like a T1, would be installed to collect the traffic and to connect it to the Internet. The connection may be at a substation or at an intermediate point, depending upon network topology.

C. PLC Could Be Deployed Rapidly.

PLC could be implemented quickly since it would use the existing electric grid and existing home wiring. Since PLC home networking would be achieved by plugging a PLC modem into any electric outlet, it would not require new wiring in existing or new homes. Utilities would equip the power lines with a "coupling" device to enable PLC, and would define service areas of potential customers for which "backhaul" connections would be established. Once this is done, customers could sign up without the requirement of a truck roll. They simply would need to obtain a PLC modem for use in their home with their PC. The coupler installed on the electric grid would be designed to be installed by a utility lineman using existing tools in their kit. The PLC network upgrade is expected to be easier, less expensive, and less time consuming than the extensive work, for instance, to upgrade cable TV networks for broadband.

Because of the relatively low deployment cost and the ubiquity of the existing electric power grid, PLC should be able to provide broadband Internet access in small towns and in some of the rural areas that may be underserved by other carriers. The PLCA believes that an additional competitor in the "last mile" that could offer broadband Internet access would reduce the cost and increase the quality of service, thereby serving the public interest as set forth in the goals outlined by the Commission.

D. PLC Could Improve The Electric Distribution System.

Although the Commission is charged with regulation of communications services, the PLCA believes the Commission also must recognize that the efficiency, reliability and security of the electric distribution system are integral to the nation's communications infrastructure. PLC could add significant intelligent networking capabilities to the existing U.S. electric grid to which all electric devices are connected. This would offer tremendous benefits in the efficiency, reliability and security of electric service.

By adding intelligent networking capabilities to the electric grid, with the various components being interconnected and addressable, management of the grid could be improved and operational costs may be reduced. Examples may include remote switching of capacitor banks and other devices, automated meter reading, outage notification, and energy management. Taking the case of outage notification as one example, with existing technology, electric utilities may not learn of a power outage until customers phone in. Utilities must attempt to piece together the location, extent and cause of the outage based on inferences from the pattern of telephone calls. However, if PLC were deployed, utilities would be able to more rapidly detect and correct power outages. Thus, PLC could provide more secure, reliable and efficient electric

service **and** at the same time could meet the Commission's stated goal of expanding the availability of broadband Internet access to more Americans.

III. The Commission Should Review The Part 15 Rules To Encourage PLC Deployment.

PLC products and services currently are in the developmental and testing stage for U.S. deployment, while European commercial deployment has begun. Preliminary indications are that these products and services would comply with the existing limits in Part 15. However, the PLCA has had indications from its member utilities and PLC technology suppliers with whom they are in discussions that some adjustments to the Rules may facilitate deployment of PLC systems with greater through put and with greater distances between system amplifiers or fiber taps. This may allow greater flexibility in designing network topology in all service areas, and may improve the ability of PLC operators to serve rural and other less dense areas, than would be possible without such operational flexibility.

The Commission long has recognized carrier current systems and has amended its Rules in order to take into account changes in technology over the years. Given the recent developments in PLC technology and the promise of adding a new, facilities based broadband Internet service provider, as well as the benefits to the electric distribution system, this is an appropriate time to review the Rules again to promote deployment of such new carrier current systems.

A. Commission Rules Provide For The Operation Of Carrier Current Systems.

Carrier current systems have been permitted to operate as low power radiation devices under FCC rules in effect since at least 1938.[5] Such systems most commonly took the form of campus radio stations with the station signal, "a modulated RF signal", being conducted along power distribution lines to buildings on campus.[6] In 1949 the Commission considered licensing such systems, but by 1954 determined to allow them to continue to operate as unlicensed RF devices under the low power rules then in effect.[7]

In 1974 the FCC was still in the process of implementing Section 302 of the Act[8] (added in 1968) and, in response to comments from a manufacturer of carrier current system transmitters, briefly mentioned that it was working on rules for the "component parts of a carrier current system."[9] In 1976 the FCC proposed more specific rules to govern carrier current systems which it described as systems where RF radiation is transmitted primarily by conduction with some leakage into space.[10] The FCC drew a distinction between carrier current systems operated by utilities for switching and controlling functions, which it proposed to exempt from meeting specific technical requirements, and those operated as campus radio stations, which it

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[5] *Carrier Current Radio Systems Operating Pursuant to Section 15.7 of the Commission's Rules and Low Power Communications Devices Operating Pursuant to Subpart E of Part 15 of the Commission's Rules, Notice of Inquiry and Proposed Rulemaking*, 28 FCC 2d 357 (Apr. 9, 1971) at ¶ 4.

[6] *Id.*

[7] *Id.* at ¶ 5.

[8] "Section 302, entitled 'Devices Which Interfere With Radio Reception,' was added to the Communications Act on July 5, 1968, by Public Law 90-379, 82 Stat. 290. This section authorizes the Commission to 'make reasonable regulations governing the interference potential of devices which in their operation are capable of emitting radio frequency energy by radiation, conduction, or other means in sufficient degree to cause harmful interference to radio communications.'" *Amendment of Part 2 of the Rules to Prescribe Regulations Governing the Sale or Import or Shipment for Sale, of Devices Which Cause Harmful Interference to Radio Communications*, 19 RR 2d 1554, 23 FCC 2d 79 (May 18, 1970), at ¶ 2.

[9] *Amendment of Part O and 2 of the Rules Relating to Equipment Authorization of RF Devices*, 29 RR 2d 781, 45 FCC 2d 52 (Feb. 15, 1974) at ¶ 35.

[10] *Amendment of Part 15 to Redefine and Clarify the Rules Governing Restricted Radiation Devices and Low Power Communications, Notice of Proposed Rulemaking*, 62 FCC 2d 666 (Apr. 23, 1976), at ¶11 (the "1976 NPRM").

proposed to define and make subject to more specific emissions limits.[11] However, by 1979 the Commission's attention was focused primarily upon RF rules for computers and the Report and Order that resulted from the 1976 NPRM deferred action on carrier current systems.[12]

In 1982, in response to a petition from the United Telecom Council, the Commission amended its Rules to recognize "power line carrier systems" as a restricted subclass of carrier current systems. [13] The Order added a footnote to the U.S. Table of Frequency Allocations and amended Part 15 to add new sections governing "power line carrier systems."[14] The Rules restrict "power line carrier systems" to operation in the frequency range of 9 to 490 kHz, to operation as an "unintentional radiator," to operation on transmission lines and not on "electric lines which connect the distribution substation to the customer or house wiring" and to use by an electric power utility for supervision of the power system.[15] The regulatory trade-off for such restricted operations is that power line carrier systems are exempt from the rules generally applicable to carrier current systems.[16] The Rules do not prohibit utilities from operating carrier current systems outside the restricted class of power line carrier systems, on the contrary the Rules specifically recognize that utilities also may operate carrier current systems "under the other provisions of this Part."[17]

In 1985 the Commission authorized the use of spread spectrum and other wide band emissions technologies in specified frequency ranges.[18] The Order mentioned work done by

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[11] *Id.* at ¶ 12-14.
[12] *First Report and Order - Technical Standards for Computing Equipment*, 46 RR 2d 473, 79 FCC 2d 28 (Oct. 11, 1979) at ¶ 2; *Reconsideration Granted in Part*, 47 RR 2d 256, 79 FCC 2d 67 (Apr. 9, 1980).
[13] *Amendment of Parts 2, 15, and 90 of the Commission's Rules to Provide Recognition for Power Line Carrier Operations of Electric Utilities in the Bands 10-490 kHz*, 52 RR 2d 1713 (Jan. 27, 1983).
[14] 47 C.F.R. § 2.105, Note US294; § 15.3(t) and § 15.113.
[15] 47 C.F.R. § 15.3 (t) and § 15.113 (f).
[16] 47 C.F.R. § 15.113 (power line carrier systems "are subject only to the following requirements.").
[17] 47 U.S.C. § 15.113 (f).
[18] *Authorization of Spread Spectrum and other Wideband Emissions not presently provided for in the FCC Rules and Regulations*, 58 RR 2d 251 (May 24, 1985); 47 C.F.R. § 15.247.

Hewlett-Packard on spread spectrum carrier current systems but deferred further action specifically related to spread spectrum carrier current systems.[19]

The Commission adopted rules governing carrier current systems as part of a broad re-write of Part 15 that commenced in 1987 and resulted in a major revision of Part 15 in 1989 (hereinafter the "*1989 Revision of Part 15*").[20] The Commission noted that the rules for non-licensed use of RF devices were first adopted almost 50 years earlier in 1938 and that typical kinds of equipment operated under those rules, "were wireless record players, carrier current systems and remote control devices."[21] A comprehensive overhaul of Part 15 was needed, the Commission noted, as unlicensed devices historically had operated between 0.3 and 30 MHz, while new products were being designed for use above 30 MHz, and the addition of new rules resulting from petitions directed to specific devices or frequency ranges had resulted in a complex patch work of regulations.[22]

The Commission adopted two broad classes of RF devices, intentional and unintentional radiators (although it also maintained the category of "incidental radiators" for equipment such as electric motors).[23] The Commission recognized that carrier current systems could be designed to function either by conduction, in which case they would be an unintentional radiator, or be received over-the-air, as, for example, in the case of college "bed springs" radio stations, in which case they would be an intentional radiator.[24] Thus, the Commission defined "carrier current systems" as:

> "**(f) Carrier current system.** A system, or part of a system, that transmits radio frequency energy by conduction over the electric power lines. A carrier current system

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[19] *Id.* at ¶ 15.
[20] *Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices without an Individual License. First Report and Order*, 66 RR 2d 295, 4 FCCR 3493 (Apr. 18, 1989)(the "*1989 Revision of Part 15*").
[21] *Id.* at ¶ 2.
[22] *Id.* at ¶ 4.
[23] *Id.* at ¶16.
[24] *1989 Revision of Part 15, Reconsideration Order*, 68 RR 2d 995, 5 FCC Rcd 7729 (Dec. 28, 1990).

can be designed such that the signals are received by conduction directly from connection to the electric power lines (unintentional radiator) or the signals are received over-the-air due to radiation of the radio frequency signals from the electric power lines (intentional radiator)."

47 C.F.R § 15.3(f). Carrier current systems contemplated for power line communications are intended to function by conduction and therefore would fall into the category of unintentional radiators.

B. The Radiated Emissions Limits For Carrier Current Systems Should Be Reviewed.

In the *1989 Revision of Part 15* the Commission adopted two broad categories of emission standards, those for conducted emissions and those for radiated emissions.[25] In general, the Rules limit conducted emissions to 250 uV for both intentional and unintentional radiators (except Class A digital devices[26]), operating between 450 kHz and 30 MHz and do not set any conducted emissions limit for devices operating above 30 MHz.[27] However, the Commission generally exempted carrier current systems from the conducted emissions limit for devices operating below 30 MHz.[28] Since carrier current systems are exempt from the conducted emissions limit generally applicable to devices operating below 30 MHz and conducted emissions are not limited for devices operating above 30 MHz, the only conducted

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[25] *1989 Revision of Part 15*, at ¶ 17.

[26] A "Class A" digital device is one marketed for use in a commercial, business or industrial environment, while a "Class B" digital device is one marketed for use in residential environments, notwithstanding that it also may be used in non-residential environments. 47 C.F.R. § 15.3(h) and (i).

[27] *See* 47 C.F.R. § 15.107(a) (conducted limits for unintentional radiators) and § 15.207(a)(conducted limits for intentional radiators) ("The interference potential of Part 15 devices below 30 MHz is controlled principally by the limit placed on conducted emissions.") *1998 Revision of Part 15*, ¶ 19.

[28] 47 C.F.R. § 15.107(c) and 15.207(c) ("The limits shown in paragraphs (a) and (b) of this section shall not apply to carrier current systems operating...on frequencies below 30 MHz.) The Commission did set a conducted emissions limit for carrier current systems operating in the AM band of 535 to 1705 kHz where it limited conducted emissions from carrier current systems to 1000 uV. 47 C.F.R. § 15.107 (c)(2) and § 15.207(c)(2), unless the system is "intended to be received using a standard AM broadcast receiver," in other words, a college "bed springs" radio station. 47 C.F.R. § 15.107(c)(1) and (3) and § 15.201(c)(1) and 3); *1989 Revision of Part 15*, at ¶128-29.

emissions limit applicable to carrier current systems is the 1000 uV limit within the frequency band 535-1705 kHz.[29]

One of the main objectives of the *1989 Revision of Part 15* was to expand the rules to allow unlicensed devices to operate above 30 MHz and to that end the Commission adopted radiated emissions limits for unintentional and intentional radiators operating at 30 MHz and above.[30] By doing so the Commission effectively expanded the right to operate unlicensed devices throughout the entire frequency band, whereas unlicensed devices generally had been limited to frequencies of 30 MHz or below,[31] although the FCC did specify some exceptions and restrictions to the general limits where necessary to accommodate licensed services in certain bands.[32]

The Commission established radiated emissions limits that are the same for intentional and unintentional radiators operating at 30 MHz or higher. The Commission did not set radiated emissions limits for unintentional radiators operating below 30 MHz, apparently because the Commission believed that the conducted emissions limit set forth above would be sufficient to regulate unintentional radiators operating below 30 MHz.[33] However, as noted above, carrier current systems are exempted from the conducted emissions limits normally applicable to devices operating below 30 MHz. In lieu thereof, the Commission said that carrier current systems operating below 30 MHz must comply with the radiated emissions limits in the general table for intentional radiators, even though the system is being operated as an unintentional

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[29] *Amendment of Part 15 to Enable the Widespread Implementation of Home Automation and Communication Technology*, 7 FCCR 4476, 70 RR 2d 1460 (June 15, 1992).
[30] *1989 Revision of Part 15* at ¶ 3, 20, and 75.
[31] *Id.* at ¶ 24-26 and 55-60.
[32] *Id.* at ¶ 30-54 and 61-74.
[33] *Id.* at ¶ 19.

radiator.[34] Thus, for carrier current systems operating below 30 MHz, the radiated emissions limits are those contained in the general table for intentional radiators,[35] while carrier current systems operating above 30 MHz would be subject to the general emissions limits for unintentional radiators.[36] The Commission should review these limits to ensure that they promote rapid deployment of PLC as a new broadband service provider while still protecting incumbent licensees from harmful interference. As additional specific information becomes available, the PLCA will attempt to supplement the record in this proceeding.

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[34] 47 C.F.R. § 15.109(e). The only exception to this general rule is that carrier current systems operating in the AM band (525 to 1705 kHz) can comply with the radiated emissions limits for "bed springs radio" systems, *i.e.* carrier current systems operated as intentional radiators, even if the system in fact is being operated as a conducted transmission system. *Id.*

[35] The radiated emissions limits for intentional radiators are set forth in Section 15.209(a) which provides:

> Radiated emission limits [for intentional radiators], general requirements.
> (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F (kHz)	300
0.490-1.705	24000/F (kHz)	30
1.705-30.0	30	30

> ....

47 C.F.R. § 15.209(a).

[36] The radiated emissions limits for unintentional radiators are set forth in Section 15.109(a) which provides:

> Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (micro volts/meter)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

47 C.F.R. § 15.109(a).

IV. Conclusion.

PLC offers the potential to speed the deployment of broadband Internet access to more Americans by utilizing and leveraging an existing third wire, to differentiate communications facilities and platforms including the critical last mile, and to improve the efficiency, reliability and security of the US electric distribution systems. As part of this biennial review of Parts 2, 15 and 18 of the Rules, the Commission should take steps to ensure that the carrier current system rules are kept up to date with new technology and do everything possible to promote the achievement of the Commission's agenda in the service of the public interest.

Respectfully submitted,

POWER LINE COMMUNICATIONS ASSOCIATION

By: 

Keith Brightfield
Chairman
Power Line Communications
Association
c/o 401 9th Street, N.W.
Suite 1000
Washington, D.C. 20004-2134
(314) 554-3464
www.plca.net

Richard Keck
James A. Stenger
TROUTMAN SANDERS LLP
401 9th Street, N.W.
Suite 1000
Washington, D.C. 20004-2134
(202) 274-2801

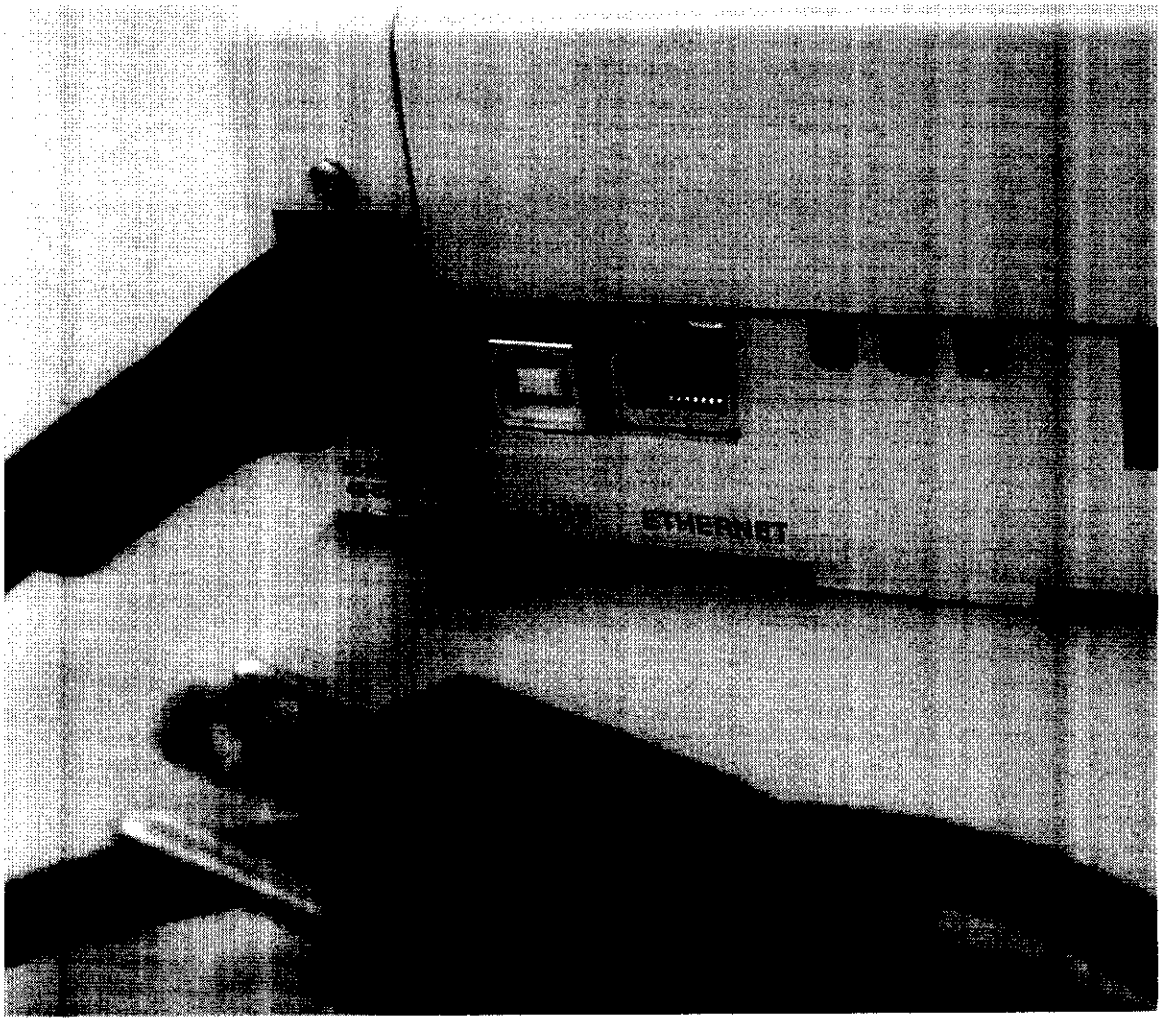
Its Counsel

Dated: February 12, 2002

Exhibit A

PLC Modem

This photograph shows the plug that provides both electric power and the communications signal to a PLC modem. It also shows the Ethernet and USB ports on the back of a PLC modem that would be connected to the PC via standard cables.



CERTIFICATE OF SERVICE

I, Magdalene Copp, secretary of the law office of Troutman Sanders LLP, do hereby certify that a copy of the foregoing Comments of the Power Line Communications Association was sent via first-class mail, postage prepaid, this 12th day of February, 2002, to the following, except for hand deliveries as indicated by asterisk:

Michael K. Powell*
Chairman
Federal Communications Commission
445 12th Street, S.W., Room 8-B201
Washington, D.C. 20554

Kathleen Q. Abernathy*
Commissioner
Federal Communications Commission
445 12th Street, S.W., Room 8-B115
Washington, D.C. 20554

Michael J. Copps*
Commissioner
Federal Communications Commission
445 12th Street, S.W., Room 8-A302
Washington, D.C. 20554

Kevin J. Martin*
Commissioner
Federal Communications Commission
445 12th Street, S.W., Room 8-A204
Washington, D.C. 20554

Edmond J. Thomas*
Chief, Office of Engineering & Technology
Federal Communications Commission
445 12th Street, S.W., Room 7-C155
Washington, D.C. 20554

Robert Pepper*
Chief, Office of Plans & Policies
Federal Communications Commission
445 12th Street, S.W., Room 7-C347
Washington, D.C. 20554

W. Kenneth Ferree*
Chief, Media Bureau
Federal Communications Commission
445 12th Street, S.W., Room 3-C740
Washington, D.C. 20554

Dorothy Attwood*
Chief, Common Carrier Bureau
Federal Communications Commission
445 12th Street, S.W., Room 5-C345
Washington, D.C. 20554

Michael J. Marcus*
Assist. Chief, Office of Engineering & Technology
Federal Communications Commission
445 12th Street, S.W., Room 7-C140
Washington, D.C. 20554

Magdalene Copp